



Contribution ID: 612

Type: **Plenary talk**

## Inertial sensor for TianQin project

*Friday, 12 July 2024 09:30 (30 minutes)*

TianQin is a Chinese space-borne gravitational wave detector proposed in 2014, and aims to detect gravitational waves in the frequency range of  $1\text{mHz} \sim 1\text{ Hz}$ , with three earth orbiting satellites with an orbital radius of about 105 km forming an equilateral triangle with side length  $1.7 \times 10^5\text{ km}$ . The free falling test masses are used as inertial references to provide measurement points for intersatellite laser interferometry, and also to guide the micro-thrusters control the spacecrafts to follow up them. The residual acceleration noise in the direction of the sensitive axis (intersatellite link) must be not exceed  $10\text{-}15\text{ m/s}^2/\text{Hz}^{1/2}$  within the detection band for TianQin. In this talk, firstly I will introduce the TianQin mission, and then present the requirement analysis and preliminary design of inertial sensor, finally give current progresses and its verification on the ground and in flight.

**Presenter:** ZHOU, Ze-Bing

**Session Classification:** Friday plenary session